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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/672,462	09/28/2000	Takashi Nakano	FUJR17.774	8550

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EXAMINER	
JAMAL, ALEXANDER	

ART UNIT	PAPER NUMBER
2643	9

DATE MAILED: 03/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/672,462	NAKANO, TAKASHI	
	Examiner	Art Unit	
	Alexander Jamal	2643	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 December 2003*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-8* is/are pending in the application.

4a) Of the above claim(s) *3* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2 and 4-8* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Withdrawal of Objections and Claims

1. Based upon the submitted amendments, examiner withdraws objections from the prior office action (December 19, 2003) to the Title of Invention, and Abstract.

2. Examiner acknowledges that claim 3 has been withdrawn from consideration.

Response to Arguments

3. Applicant's arguments with respect to claims 1-8 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. **Claims 1-2,4-6** rejected under 35 U.S.C. 103(a) as being unpatentable over Doughty (4551581), and further in view of Tabu et al (JP362078941A) in view of Dalal et al. (6115469).

a. **Claim 1**: Doughty describes a method and apparatus for outputting a ringing signal, and a data signal during the silent intervals of the ringing signal comprising:

i. Ringing voltage generating means (reference 135 Fig 1, Col 3, lines 30-32).

ii. Ringing signal sending means for sending a ringing signal with a predetermined duty cycle of a ringing and silent period (reference 133 Fig 1, Col 13, lines 49-53).

iii. Data transfer means for performing a data transfer to the called terminal over the subscriber line during a silent period (reference 520 Fig 5, Col 1 line 60 thru Col 2 line 2).

But Doughty does not mention:

iv. Feed impedance selection means for selecting a low-impedance feed voltage for a silent period with data being transferred, and selecting a high-impedance feed during silent periods with no data being transferred.

v. Feed impedance setting means for providing the high impedance feed voltage to the subscriber line when said feed impedance selection means selects feeding of the high-impedance feed voltage, wherein the high-impedance feed voltage is realized by inserting a predetermined resistance on the subscriber line in series with a subscriber line circuit (SLIC) that drives the subscriber line, while the low impedance feed voltage is provided by removing the predetermined resistance from the subscriber line.

Tabu teaches a call signal transmission circuit with means for selecting a high or low voltage feed impedance (reference 100 Fig. 1, translation page 4 'OPERATION'). Tabu teaches that a high impedance voltage feed during the silent periods of the ringing

cycle can help reduce transient impulse noise (translation page 4, 'OPERATION'). It would have been obvious to one of ordinary skill in the art at the time of this application to provide a high impedance feed for Doughty's ring generator during a silent period in which no ringing signal is present for the purpose of reducing the impulse noise in the system.

Dalal teaches an apparatus (Fig. 1) for sending a ringing signal as well as providing the DC bias for the off-hook or idle modes. Dalal's apparatus will either output a ringing signal, or an off-hook voltage feed or an idle state voltage feed (Col 2 lines 28-61). He teaches the advantage that using the Ringing/Off-hook bias generator will save the cost of implementing a separate talk battery voltage, as well as any relay or other type of switching logic to 'switch' between a ringing generator and a 'talk mode' battery. It would have been obvious to one of ordinary skill in the art at the time of this application to implement Dalal's device in Tabu's circuit to have one device that delivers either ringing or off-hook voltage feed to the same output stage in order to eliminate the costs and complexity of switching between the ringing signal generator and the 'talk mode' voltage feed.

Doughty's device in view of Dalal and Tabu's teaching would implement a common device (DOUGHTY: combining line unit 121 and ringing circuit 133 in Fig. 1 as one device with one output stage as per DALAL Fig. 1). This device would comprise part of the subscriber line interface circuit (SLIC) and provide a single output stage upon which ringing or offhook voltage feed could be driven. In this configuration, the variable

resistance element (TABU: element 100 Fig. 1) would always be in series with the SLIC. The variable resistor would be set to high impedance mode during the silent periods (with a variable resistance in series with the subscriber circuit). During the ringing periods, the predetermined high-resistance would be removed from the line and replaced by a low-resistance feed (when the variable resistor is changed, the predetermined resistance is 'removed'). Doughty's system specifies that the data transmitted during the silent interval is coupled using low impedance means (Col 10, lines 26-32). As such, the voltage feed would be switched back to a low-impedance feed during the transmission of data during one of the silent periods. It would have been obvious to one of ordinary skill in the art at the time of this application to provide (in series with the SLIC) a low impedance feed when data is being transferred or the ringing signal is present, and a high impedance feed during a silent period in which no data or ringing signal is present for the purpose of reducing the impulse noise in the system.

b. **Claim 2:** Doughty's system utilizes a microprocessor interface (reference 502, Fig 5), along with a ringing detector (reference 501, Fig 5) to provide path setup means to magnetically couple a data signal (references 530,531, Fig. 5) onto the subscriber loop when the data is scheduled (during a silent interval). The operation of these components is specified in (Col 8, line 35 thru Col 10 line 49).

c. **Claim 3:** Withdrawn from consideration

d. **Claim 4:** A ringing voltage generating means inherently comprises a ring voltage source and a ringing signal bias voltage source. Tabu's system includes feed impedance

setting means (reference 100, Fig. 1) coupled to a call signal generating device (reference 5, Fig. 2).

e. **Claim 5:** Tabu teaches the use of a high impedance feed at all times except during data transfer or a ring signal. A short interrupt period during the ringing cycle would mean a ring signal was not present on the subscriber pair. Therefore Tabu's teachings would specify using a high-impedance feed in those instances.

f. **Claim 6:** Tabu teaches the use of a high impedance feed at all times except during data transfer or a ring signal. The use of a high impedance feed at the beginning and end of a silent period with data transfer would only occur during the portion of the silent period in which data was NOT being transferred. Therefore Tabu's teachings would specify using a high-impedance feed in those instances.

6. **Claims 7-8** rejected under 35 U.S.C. 103(a) as being unpatentable over Doughty (4551581), and further in view of Tabu et al (JP362078941A) in view of Dalal et al. (6115469).

a. **Claim 7**: Doughty describes a method and apparatus for outputting a ringing signal, and a data signal during the silent intervals of the ringing signal comprising:

i. Ringing voltage generating means (reference 135 Fig 1, Col 3, lines 30-32).

ii. Ringing signal sending means for sending a ringing signal with a predetermined duty cycle of a ringing and silent period (reference 133 Fig 1, Col 13, lines 49-53).

But Doughty does not mention:

iii. Feed impedance selection means for selecting a high-impedance feed to drive a subscriber's line during silent periods.

iv. Feed impedance setting means to provide a high-impedance feed voltage to the subscriber line. The high-impedance voltage being realized by inserting a pre-determined resistance on the subscriber line in series with a SLIC that drives the subscriber line.

Tabu teaches a call signal transmission circuit with means for selecting a high or low voltage feed impedance (reference 100 Fig. 1, translation page 4 'OPERATION'). Tabu teaches means (variable resistance) to provide a high impedance voltage feed during the silent periods of the ringing cycle can help reduce transient impulse noise (translation page 4, 'OPERATION'). It would have been obvious to one of ordinary skill in the art at the time of this application to provide a high impedance feed for Doughty's ring generator during a silent period in which no ringing signal is present for the purpose of reducing the impulse noise in the system.

Dalal teaches an apparatus (Fig. 1) for sending a ringing signal as well as providing the DC bias for the off-hook or idle modes. Dalal's apparatus will either output a ringing signal, or an off-hook voltage feed or an idle state voltage feed (Col 2 lines 28-61). He teaches the advantage that using the Ringing/Off-hook bias generator will save

the cost of implementing a separate talk battery voltage, as well as any relay or other type of switching logic to 'switch' between a ringing generator and a 'talk mode' battery. It would have been obvious to one of ordinary skill in the art at the time of this application to implement Dalal's device in Tabu's circuit to have one device that delivers either ringing or off-hook voltage feed to the same output stage in order to eliminate the costs and complexity of switching between the ringing signal generator and the 'talk mode' voltage feed.

Doughty's device in view of Dalal and Tabu's teaching would implement a common device (DOUGHTY: combining line unit 121 and ringing circuit 133 in Fig. 1 as one device with one output stage as per DALAL Fig. 1). This device would comprise part of the subscriber line interface circuit (SLIC) and provide a single output stage upon which ringing or offhook voltage feed could be driven. In this configuration, the variable resistance element (TABU: element 100 Fig. 1) would always be in series with the SLIC. The variable resistor would be set to high impedance mode (a predetermined resistance is 'inserted' to the circuit) during the silent periods (with a variable resistance in series with the subscriber circuit). It would have been obvious to one of ordinary skill in the art at the time of this application to provide (in series with the SLIC) a high impedance feed during a silent period in which no data or ringing signal is present for the purpose of reducing the impulse noise in the system.

b. **Claim 8:** Tabu teaches the use of a high impedance feed at all times except during a ring signal. A short interrupt period during the ringing cycle would mean a ring signal was not present on the subscriber pair. Therefore Tabu's teachings would specify using a high impedance feed in those instances.

Conclusion:

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexander Jamal whose telephone number is 703-305-3433. The examiner can normally be reached on M-F 8AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Curtis A Kuntz can be reached on 703-305-4708. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9306 for regular communications and 703-872-9315 for After Final communications.

AJ
February 17, 2004

DUC NGUYEN
PRIMARY EXAMINER